

REMARKS

I. PRELIMINARY REMARKS

Minor modifications have been made to the specification. Claims 1 and 14 been amended. Claims 3, 9-13 and 19-40 have been canceled. No claims have been added. Claims 1, 2, 4-8 and 14-18 remain in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

Applicant notes that the Office Action Summary includes a minor typographical error. Specifically, the Office Action Summary indicates that elected and examined claims 1-8 and 14-18 have been withdrawn from consideration. Applicant has assumed for the purposes of this response that the Examiner intended to indicate that non-elected (and now canceled) 9-13 and 19-40 were withdrawn from consideration.

II. REJECTION UNDER 35 U.S.C. § 112

A. The Rejection

Claim 14 has been rejected under 35 U.S.C. § 112, first paragraph, as purportedly failing to comply with the enablement requirement. The rejection under 35 U.S.C. § 112 is respectfully traversed. Reconsideration thereof is respectfully requested.

B. Discussion

The Office Action appears to have asserted that the specification does not disclose structure that performs the function of "decomposing an inorganic oxygen containing salt into oxygen and a non-volatile salt." The only explanation provided for the rejection is the statement that "the 'means' is not described in the specification." [Office Action at page 2.] This statement is clearly incorrect. The present specification dedicates more

than two full pages to the description of the structure that performs the function of "decomposing an inorganic oxygen containing salt into oxygen and a non-volatile salt." [See page 5, line 25 to page 7, line 31 of the application as filed.] For example, and referring to Figure 1, the specification indicates that:

1. "The oxygen producing material in the exemplary implementation is an inorganic oxygen containing salt that will decompose into O_2 and a non-volatile salt when heated." [Page 5, lines 26-27 of the application as filed.]
2. "The heat for the decomposition of the metal chlorate or other inorganic oxygen containing salt may be provided in a variety of ways, both at startup and after fuel cell operation has begun." [Page 6, lines 23-25 of the application as filed.]
3. "In the exemplary implementation illustrated in Figures 3 and 4, heat is provided at startup by a parasitic heater 140." [Page 6, lines 25-26 of the application as filed.]
4. "The exemplary parasitic heater 140 ... is a resistive heater that includes a plurality of resistors 142." [Page 6, lines 27-30 of the application as filed.]
5. Other exemplary heaters that may be used as the parasitic heater 140 include "a fuel burning heater" as well as "microcatalytic combustors, ignition heaters and heat pipes." [Page 7, lines 4-7 of the application as filed.]
6. "Once the fuel cell reaction has started, heat for the decomposition of the inorganic oxygen containing salt is provided by a heater 148." [Page 7, lines 8-9 of the application as filed.]
7. "The exemplary heater 148 is a catalytic combustor [that] receives some of the byproducts and unused reactants (if any) from the anode-side outlet line 130." [Page 7, lines 10-14 of the application as filed.]
8. Other exemplary heaters that may be used as the heater 148 include "a heat exchanger" as well as "microcatalytic combustors, ignition heaters and heat pipes." [Page 7, lines 19-22 of the application as filed.]

In view of the forgoing, applicant respectfully submits that the present specification, as filed, provided far more than was necessary to satisfy the requirements of 35 U.S.C. § 112, first paragraph, and, accordingly, that the "enablement" rejection should be withdrawn.

The impropriety of the rejection under 35 U.S.C. § 112, first paragraph, notwithstanding, and to the extent that the "enablement" rejection was actually due to a

misunderstanding concerning the means-plus-function element in claim 14 and the corresponding portions of the specification, claim 14 has been amended to recite "means ... for heating an inorganic oxygen containing salt to a temperature sufficient to cause the inorganic oxygen containing salt to decompose into oxygen and a non-volatile salt." Corresponding amendments have also been made to pages 6 and 7 of the specification. [Note MPEP § 2181-IV.]

III. REJECTION UNDER 35 U.S.C. §§ 102 AND 103

A. The Rejections

Claims 1 and 4-7 have been rejected under 35 U.S.C. § 102 as being anticipated by, or in the alternative under 35 U.S.C. § 103 as being obvious over, U.S. Patent No. 3,546,020 to Berger ("the Berger patent"). Claims 1-3, 8 and 14-18 have been rejected under 35 U.S.C. § 103 as being obvious over the combined teachings of the Berger patent and U.S. Patent No. 5,827,620 to Kendall ("the Kendall patent"). The rejections under 35 U.S.C. §§ 102 and 103 are respectfully traversed with to the extent that they are applicable to the claims as amended above. Reconsideration thereof is respectfully requested.

B. Discussion Concerning the Rejection of Claims 1 and 4-7 Based Solely on the Berger Patent

Independent claim 1 has been amended so as to call for a "heater," which was previously recited in now canceled dependent claim 3. In view of the fact that dependent claim 3 was not rejected under 35 U.S.C. § 102 or 103 as being anticipated by or obvious over the Berger patent, applicant respectfully submits that the rejections of claims 1 and 4-7 under 35 U.S.C. §§ 102 and 103 based solely on the Berger patent have been rendered moot.

C. Discussion Concerning the Rejection of Claims 1, 2, 8 and 14-18 Based on the Proposed Berger/Kendall Combination

Independent claim 1 calls for a combination of elements comprising "a fuel cell" and "an oxygen supply, operably connected to the fuel cell, including an inorganic oxygen containing salt that decomposes into oxygen and a non-volatile salt in response to the application of heat and a **heater that heats the inorganic oxygen containing salt.**" The respective combinations defined by claims 2 and 8 include, *inter alia*, the elements recited in claim 1. Independent claim 14 calls for a combination of elements comprising "a fuel cell" and "**means, operably connected to the fuel cell, for heating an inorganic oxygen containing salt** to a temperature sufficient to cause the inorganic oxygen containing salt to decompose into oxygen and a non-volatile salt." The respective combinations defined by claims 15-18 include, *inter alia*, the elements recited in claim 14.

The cited references fail to teach or suggest the claimed combinations. For example, and referring to Figure 6, the Berger patent discloses a fuel cell 10 with a sealed oxygen chamber 57 that contains a metal chlorate. Oxygen is generated by exposing the metal chlorate to a catalyst, i.e. the platinum catalyst electrode 19. [Column 8, lines 26-48.] In contrast to the claimed combinations, there is no heater (or other structure) that heats the metal chlorate. The Kendall patent fails to remedy this deficiency. The Kendall patent discloses that **air supplied by a blower fan or other inlet may be pre-heated** on its way to a fuel cell. [Figure 4; column 3, line 64 to column 4, line 2; and column 7, lines 5-9.] Thus, even assuming for the sake of argument that there was some reason to combine their teachings, the Kendall patent would not have suggested heating the Berger metal chlorate. The Kendall patent teaches nothing more than pre-heating air that has already been obtained.

In view of the forgoing, applicant respectfully submits that the Berger and Kendall patents fail to establish a *prima facie* case of obviousness with respect to the inventions defined by independent claims 1 and 14, and that the rejection of claims 1, 2, 8 and 14-18 under 35 U.S.C. § 103 should be withdrawn.

IV. CLOSING REMARKS

In view of the foregoing, it is respectfully submitted that the claims in the application are in condition for allowance. Reexamination and reconsideration of the application, as amended, are respectfully requested. Allowance of the claims at an early date is courteously solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is respectfully requested to call applicant's undersigned representative at (310) 563-1458 to discuss the steps necessary for placing the application in condition for allowance.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-0638. Should such fees be associated with an extension of time, applicant respectfully requests that this paper be considered a petition therefor.

Respectfully submitted,

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Date

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